

REMARKS

Claims 1-34 were examined in the Office Action August 30, 2004.

The Applicant wishes to thank the Examiner for the indication that claims 5, 8-10, 18, 20, 22-23 and 29 recite patentable subject matter. For the reasons set forth below, the Applicant believes these claims depend from allowable patent claims, and therefore respectfully decline the invitation to place these claims into independent form at this time.

Independent claims 1, 14, 26 and 32 have been amended to clarify that the interior and exterior containers recited in the claims do not move relative to one another to actuate the recited thermal switches, e.g.: “said containers arranged in fixed positions relative to one another.”

The following address each of the issues raised in the Office Action.

Drawing Objections: The drawings stand objected to for failure to show a “system having 2 thermal switches or a thermal switch which can change the shape of the contact area.”

As to the “thermal switch which can change the shape of the contact area,” the Applicant notes that the specification identifies this feature in Fig. 1. In the Background and Summary of the Invention, the Specification states:

... at least one of [the output and receiving] elements can be designed in such a manner so as to be flexible or variable in shape that in the closed state of the thermal bridge element adequate heat transfer is guaranteed. ... For example, the output element can vary in shape so that in the closed state of the thermal bridge element it clamps the receiving element between itself.

Specification ¶ [0013] (emphasis added). This varying-shape clamping feature is expressly described with reference to Fig. 1 in the Detailed Discussion:

The switch selectable thermal bridge element 4 is not shown here in detail, because design variants of all kinds are possible. *For example, moveable so-called jaws of the output element 4a, referenced with an arrow 6 in the attached figure, can be shifted in such a manner that in the closed state of the thermal bridge element 4, it clamps the receiving element 4b between itself.*

Id. ¶ [0022] (emphasis added). Thus, the Applicant has identified in the Fig. 1 example the portions of the output element which move (and thus vary the contact shape) in a manner which would be readily understood by one of ordinary skill, and thereby satisfied the § 1.83 requirement for showing every feature specified in the claims. Moreover, because detailed illustration of this feature “is not essential for a proper understanding of the invention,” this feature is accordingly “illustrated in the drawing in the form of a graphical drawing symbol,” as permitted by § 1.83. Reconsideration and withdrawal of the drawing objection as to this aspect of the present invention is respectfully requested.

As to the illustration of a second thermal switch, the Applicant respectfully submits that Fig. 1 already provides sufficient illustration, and that addition of a drawing (which would be little more than an additional copy of Fig. 1 with a second, identical schematic illustration of a thermal switch) is not required by § 1.83.

One of ordinary skill in the art, after having learned of the essential nature of the present invention from the present Specification, drawing and claims, would immediately recognize that more than one thermal switch could

easily be included essentially anywhere within the insulating vacuum space 3. Thus, because a modified version of Fig. 1 showing a second, identical thermal switch would not provide one of ordinary skill in the art with *any* useful information beyond that already apparent from in Fig. 1, further illustration is not needed "for a proper understanding of the invention." Accordingly, the Applicant respectfully requests reconsideration of the pending drawing objection.

The Amended Claims Are Patentable Under § 103(a): Claims 1-4, 6-7, 11-17, 19, 21, 24-28 and 30-34 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 2,830,444 to Morrison ("Morrison"), in view of U.S. Patent No. 3,006,611 to Isham ("Isham"). The Applicant respectfully traversed the pending rejection on the ground these references fail to teach or suggest all the features of the present invention recited in the pending claims.

As amended, claims 1, 14, 26 and 32 recite, *inter alia*, that the internal and external containers do not move relative to one another as the thermal switch is actuated.

Morrison teaches a fixed inner container 3 which is held stationary within its outer wall 4 "with a non-heat conducting structure holding them in fixed relation with one another, such structure being preferably of dry wood." Morrison at 1:57-64; Figs. 1, 2. Morrison contains no discussion or suggestion of thermal switches of any sort.

Isham teaches a *moveable* inner container "A" equipped with vanes 27, which come into contact with external container vanes 24 when solenoid "M" is energized.

There is no suggestion or motivation for the combining of these references to obtain “an internal storage container and an external container enveloping said internal container so as to form an insulating vacuum, said containers arranged in fixed positions relative to one another” and equipped with a “switch selectable thermal bridge element, over which a heat conducting connection between the wall of the internal container and the wall of the external container can be produced or interrupted.” This is because incorporation of Isham into Morrison would result in an unworkable device, and/or impermissibly change the principal of operation of Morrison and thereby render it unsatisfactory for the intended purpose of storing cryogenic liquid.

In order to make Morrison’s internal tank free-standing (to permit the use of Isham’s movable internal tank approach), Morrison’s internal tank-stabilizing, insulating wood structures would have to be eliminated. Yet these the inventive principle of operation of Morrison is to use these wood elements to “greatly strengthen[] the tank with minimum weight and with great insulation qualities.” Morrison at 1:62-64. Thus, modification of Morrison to permit the use of Isham would defeat Morrison’s innovation, weakening the tank and tending to make it unsuitable for its intended purpose.

Moreover, if the Morrison wood elements were preserved, the Isham moving tank approach would simply not work, *i.e.*, there can be no reasonable expectation that a system which relies on moving an internal tank to bring vanes into contact with one another could function where the internal tank is fixed relative to the external tank. Nor does Isham contain any further suggestion as

to how to adapt its moving internal container heat transfer system to a fixed-container system.

Because no suggestion or motivation can be found in either Morrison, Isham or elsewhere for the combination of these references to obtain the invention recited in the amended independent claims, these claims and their respective dependent claims are patentable over Morrison and/or Isham under § 103(a). Reconsideration and withdrawal of the pending § 103(a) rejection is respectfully requested.

CONCLUSION

In view of the foregoing, the Applicant respectfully submits claims 1-34 are in condition for allowance. Early and favorable consideration and issuance of a Notice of Allowance for these claims is respectfully requested.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

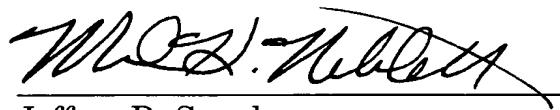
If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit

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Respectfully submitted,

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